

G. semiopacus Jek. l. c. p. 612.
melsheimeri Jek. l. c., p. 613.

CNEMOTRUPES Jekel.

G. egeriei Germ. Ins. Spec. i, p. 144.
lecontei ♀ Jek. l. c., p. 592.
G. opacus Hald. Proc. Acad. 1853, p. 362.
haldemani Jek. l. c., p. 593.
chevrolati Jek. l. c., p. 595.
G. blackburnii Fabr. Spec. Insect. i, p. 20, no. 85.
excrementi Say, Jour. Acad. iii, p. 210.

var. jekellii Horn l. c., p. 317.
conicollis Jek. l. c., p. 591.

G. ulkei n. sp.

G. occidentalis. Horn Trans. v. viii, p. 144.

MELANOTRUPES.

G. hornii n. sp.

PELTOTRUPES.

G. chalybaeus Lec. Proc. Am. Phil. Soc. v. xvii, p. 402.

NOTE ON CHINCH BUG DISEASES.

BY STEPHEN ALFRED FORBES, CHAMPAIGN, ILL.

Two diseases of *Blissus leucopterus*, apparently efficient in suppressing an outbreak of this species in 1882, were described by me in my Report for that year as State Entomologist of Illinois (pp. 47-54); but neither of these has been distinctly recognized since, until the present season. Now, however, the chinch bugs of the southern part of Illinois are being very rapidly destroyed by both these diseases, and a third not hitherto recognized,—the last (seen by me first in July, 1887) due to a *Botrytis* distinct from the species (*B. bassiana*) well known as the characteristic fungus of muscardine in the silkworm.

One of the two first mentioned is caused by an *Entomophthora* whose specific affinities I have not been able to learn.

The other is due to a microbe (the

Micrococcus insectorum of Burrill*) principally developed in the alimentary canal, and especially in its cæcal appendages, which are often literally crammed with it from end to end. This disease somewhat resembles that known as *schlaffsucht* or *flacherie* in the literature of the silkworm. Its germ is freely cultivable both in beef broth and in solid gelatine media, by the processes usual in bacterial investigation.

Both the *Entomophthora* and the *Botrytis* finally imbed the insect in a white fungus,—the efflorescence of a spore-bearing mycelium. The *Botrytis* has been much more abundant

* American Naturalist XVII, p. 319. This microbe, studied anew by Prof. Burrill from my recent cultures, solid and fluid, and from the affected chinch bugs themselves, proves to be a *Bacillus* of peculiar character, and not a *Micrococcus*.

and destructive in Illinois than the *Entomophthora*, although seemingly less so at present than the bacterial form.

It now seems likely that these diseases, occurring as they do spontaneously over a large area, will soon suppress what has probably been the longest-continued destructive outbreak of the

chinch bug known in the history of that insect. Their present activity is illustrated by the fact that in a single field in Southern Illinois dead chinch bugs imbedded in this mold were found by an assistant, Mr. John Marten, so numerous as to suggest a recent flurry of snow.

NOTES ON THE WHITE ANT, FOUND ON THE BAHAMAS.

BY CHARLES J. MAYNARD, NEWTONVILLE, MASS.

Among the many objects of interest that engage the attention of the Naturalist on the Bahamas perhaps the most striking are the nests of the White Ants. The first that I saw was in the vicinity of Nassau in a cultivated field. It is the custom among the natives upon clearing away any portion of the low growth of trees, that occupy the land before it is tilled, to leave certain ones which serve for bean polls, or as a support for the stem of the yam which climbs to a considerable height. The tree usually selected is the gumbo limbo, that has long naked branches, the twigs of which are only scantily supplied with leaves. These trees are so very often chosen by the ants as a support that it is not infrequent to see two or three nests in one field placed on them. The color of these domiciles is nearly black and as they are often of a large size they form conspicuous objects, even when seen from a distance.

The nest, of which I have spoken, was placed upon a limb some three feet

from the ground, was about four feet high by some two feet in diameter and was very nearly of the form of an old fashioned bee hive. This object in the midst of the field presented such a singular appearance that it was only upon close observation that I convinced myself that it was not something made by the owner of the field, and placed there by him for some purpose.

Subsequent observation showed that the ants prefer to build in openings, and that the gumbo limbo is a favorite tree on which to place their nests; this may be explained by the fact that the trunks of these trees are covered with a smooth bark thus rendering the covered passages that the insects build between the ground and nests more easy of construction than on rougher material. There are two reasons, that appear plausible, why the ants prefer open fields to less exposed and more shady locations; the first of which is that they like the hot sunshine and free circulation to dry the moist material which is used in the